

Claims

- [c1] 1. A method of producing a permanent magnet comprising the steps of:
preparing an admixture of magnetic material and binder material, said admixture having a particle size less than 325 mesh;
heating a carrier gas to a temperature substantially below the melting point of either component of said admixture;
introducing said admixture into said carrier gas;
spraying said admixture atop a ductile carrier, said admixture adhering to said carrier;
forming a solid permanent magnet; and
applying an electric field to said magnet to create a permanent magnetic moment.
- [c2] 2. The method of claim 1, wherein said magnetic material is selected from the group consisting of iron, nickel, cobalt, samarium-cobalt, aluminum-nickel-cobalt, neodymium-iron-boron and samarium-iron-nickel or mixtures thereof.
- [c3] 3. The method of claim 2, wherein said binder material is selected from the group consisting of iron, nickel or cobalt or mixtures thereof.
- [c4] 4. The method of claim 1, wherein said carrier is aluminum.
- [c5] 5. The method of claim 1, wherein said carrier is iron.
- [c6] 6. A method of producing a permanent magnet attached to a component of an electric machine comprising the steps of:
preparing an admixture of magnetic material and binder material;
heating a carrier gas to a temperature substantially below the melting point of either component of said admixture;
introducing said admixture into said carrier gas;
spraying said admixture atop said component, said admixture adhering to said component;
forming a solid permanent magnet adhered to said component;
applying an electric field to said magnet to create a permanent magnetic moment.

- [c7] 7. The method of claim 6, wherein said admixture of magnetic material and binder material have a particle size less than 325 mesh.
- [c8] 8. The method of claim 6, wherein said magnetic material is selected from the group consisting of iron, nickel, cobalt, samarium-cobalt, aluminum-nickel-cobalt, neodymium-iron-boron and samarium-iron-nickel or mixtures thereof.
- [c9] 9. The method of claim 6, wherein said binder material is selected from the group consisting of iron, nickel or cobalt or mixtures thereof.
- [c10] 10. The method of claim 6, wherein said carrier is aluminum.
- [c11] 11. The method of claim 6, wherein said carrier is iron.
- [c12] 12. The method of claim 6, wherein said electric machine is a motor.
- [c13] 13. The method of claim 6, wherein said electric machine is a generator.
- [c14] 14. The method of claim 6, further comprising the step of kinetically spraying a conductor coil atop a second component of said machine.
- [c15] 15. The method of claim 14, further comprising the step of aligning said component and said second component whereby said magnetic moment penetrates the coil.